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partments interested primarily in teaching.

To emphasize some of these possibilities and opportunities, as exemplified in our department at Pennsylvania during the last five years, in the hope that our experience may be of benefit to other universities, is the principal object of this exposition.

RICHARD M. PEARCE

UNIVERSITY OF PENNSYLVANIA

SCIENTIFIC NOTES AND NEWS

DR. EUGENE WOLDEMAR HILGARD, professor of agriculture in the University of California from 1875 until his retirement in 1904, distinguished for his contributions to agricultural chemistry and geology, died on January 8, in his eighty-fourth year.

THE American Association for the Advancement of Science held a special meeting in Washington on January 3 and 4, in honor of the Pan-American Congress. On the evening of January 3 Dr. R. S. Woodward, president of the Carnegie Institution, presided, and Dr. W. W. Campbell, president of the American Association, delivered an illustrated address on the "Evolution of the Stars." On January 4 two sessions were held at the new National Museum when programs were presented relating mainly to the natural history of South America.

THE Italian government has placed the zoological station at Naples under the control of a royal commission, of which F. Sav. Monticelli, professor of zoology in the University of Naples, is president. The commission announces that it will furnish means to continue the work of the station, and engagements entered into in regard to tables for research.

DR. REID HUNT, of the Harvard Medical School, has been elected president of the American Society for Pharmacology and Experimental Therapeutics.

DR. SAMUEL G. DIXON has been elected president of the Academy of Natural Sciences, Philadelphia, for the twenty-first time and executive curator for the twenty-fifth time.

ROBERT BRADFORD MARSHALL, chief geographer of the United States Geological Survey, has been appointed superintendent of national parks.

DR. JOHN S. BILLINGS, JR., has been appointed deputy health commissioner of New York.

MR. BURIAN, the Austrian premier, is reported to have suggested through a neutral ambassador that Dr. Robert Bárány, the Viennese aurist and winner of the Nobel prize in medicine, now a prisoner in Russia, be exchanged for a Russian prisoner held in Austria.

DR. ALFRED IRVING LUDLOW, professor of surgery and surgical pathology, Seoul Medical College, Korea, will sail for the Orient to resume his duties on January 8, 1916.

PROFESSOR GEORGE NEIL STEWART, director of the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, has returned from abroad.

THE magnetic survey vessel, the *Carnegie*, at present under the command of J. P. Ault, of the Department of Terrestrial Magnetism, arrived at Port Lyttelton, New Zealand, on November 3, after a successful continuous trip of ninety days from Dutch Harbor, Alaska. Leaving Port Lyttelton on December 5, the *Carnegie* is now engaged on the accomplishment of the circumnavigation of the region between the parallels 50° and 60° south, where almost no magnetic data have been secured during the past 75 years.

A BIOLOGICAL expedition to the island of Santo Domingo will be undertaken next fall by Professor J. G. Needham, of the department of entomology in the college of agriculture, Cornell University. He will be accompanied by his son, J. T. Needham, '18, and by Ludlow Griscom and K. P. Schmidt, both assistants in his department.

PROFESSOR C. P. BERKEY, of the department of geology of Columbia University, has just completed a series of investigations of the geology of New York City. He has mapped out a scheme to save borings or explorations for any project in the city, such as aqueducts,

tunnels or building foundations. Professor Berkey has constructed a map of the city on which will be plotted the findings of such borings to be used for future reference. In this way the substrata of the entire city will in time be plotted on the map and engineers working on any project will be spared the trouble and expense of new determinations.

BEFORE the Geographical Society of Chicago on January 14 there was an illustrated lecture by Mr. Anthony Fiala entitled "Through the Brazilian Jungles with Colonel Roosevelt"; on January 28, Professor William I. Thomas, of the University of Chicago, will lecture on "The Comparative Mental and Moral Worth of Races."

DR. FRANK G. SPECK, assistant professor of anthropology in the University of Pennsylvania, lectured before the Geographical Society of Philadelphia on January 14 on "Hunting Territories and Game Rights of the Tribes of the Lower St. Lawrence."

At the 221st meeting of the Elisha Mitchell Scientific Society, held in the Chemistry Hall of the University of North Carolina on December 14, the program consisted of an address on "Some Phenomena of Fluid Motion and the Curved Flight of a Baseball," by Dr. W. S. Franklin, formerly professor of physics, Lehigh University. On December 20 Professor Franklin delivered a lecture at the laboratory of the Department of Terrestrial Magnetism at Washington, entitled, "On the Limitations of One-to-one Correspondences in Physics."

DR. L. A. BAUER gave an illustrated address at the Carnegie Institution of Washington on December 9 on "Our Earth a Great Magnet."

DR. J. J. TAUBERHAUS, associate plant pathologist of the Delaware Experiment Station, will deliver the John Lewis Russell lecture before the Massachusetts Horticultural Society on March 27, on "Diseases of Sweet Peas."

At the annual meeting of the trustees of the Adirondack Cottage Sanatorium, December 21, Dr. Walter B. James, New York City, was elected president; Dr. Edward R. Baldwin, Saranac Lake, vice-president; Mr. George S. Brewster, secretary-treasurer, and Dr. Fred-

erick H. C. Heise, Trudeau, resident physician. The trustees adopted a resolution paying tribute to the memory of Dr. Edward L. Trudeau and directing that this tribute be spread on the records of the meeting.

THE *Journal* of the American Medical Association states that the *Presse Médicale* gives an illustration of the large tablet to be erected under the arcade of the great staircase of the medical department of the University of Paris. In October the design, already in place, contained the names of six members of the faculty, victims of the war (Galland, Legrand, Moog, Pelissier, Schrameck and Reymond—the latter the aviator). There are also inscribed the names of forty-seven students, and of twenty-six former graduates of the institution. Landouzy comments on this total of seventy-nine medical victims that the new methods of warfare have incredibly increased the dangers and privations of the medical men with the army. They keep right with the men in the trenches and toil on while others sleep.

FRANCIS MARION WEBSTER, of the Bureau of Entomology, died on January 3 in Columbus, O., at the age of sixty-six years.

DR. JAMES CLARKE WHITE, adjunct professor of chemistry in the Harvard Medical School from 1866 to 1871, and professor of dermatology from 1871 until his retirement as professor emeritus in 1902, died on January 6, in his eighty-third year.

PROFESSOR ROBERT JAMES DAVIDSON, since 1891 professor of chemistry at the Virginia Polytechnic Institute and dean of the scientific department, died suddenly on December 19, in his fifty-third year.

DR. WALTER L. CAPSHAW, for seven years professor of anatomy at the University of Oklahoma, died suddenly of pneumonia at his home in Norman on Christmas morning. He was a graduate of St. Louis University and intended studying in one of the eastern schools while on sabbatic leave this year, but was prevented on account of ill health.

DR. CHARLES CLIFFORD BARROWS, professor of gynecology at the Cornell University Med-

ical College, died on January 3, aged fifty-nine years.

DR. JOSEPH J. O'CONNELL, health officer of the port of New York, lecturer on hygiene in the New York University and lecturer on public health in the Long Island College Hospital, died on January 1, at the age of forty-nine years.

DR. W. A. BORGER, assistant director of the Pasteur Institute and vaccination service in Java, has died, aged forty years. He succumbed to laboratory infection from research on bubonic plague.

THE death of Dr. Jules Ville, professor of medical chemistry at the Faculté de Montpellier, is announced.

THE annual general meeting of The American Philosophical Society will be held on April 13, 14 and 15, 1916, beginning at 2 P.M. on Thursday, April 13.

THE sessions of the fourth annual meeting of the New York State Forestry Association will be held at Syracuse on January 21. The program has been considerably broadened and in addition to discussing forests as producers of timber there will be considered the necessity of the forests in controlling the run-off of water, the forests as a recreation place and as a home for fish and game. The Honorable Gifford Pinchot and Chief Forester Graves, of the U. S. Forest Service, have been invited to speak. The list of speakers will include also John B. Burnham, president of the New York State Fish, Game and Forest League, who will give an illustrated address on game protection and propagation, and Dean Baker, of the State College of Forestry at Syracuse, who will speak on forests and the conservation of water in the state.

THE directors of the Fenger Memorial Fund announce that \$550 have been set aside for medical investigation in 1916. The money will be used to pay all or part of the salary of a worker, the work to be done under direction in an established institution, which will furnish the necessary facilities and supplies free of cost. It is desirable that the work undertaken should have a direct clinical bearing.

Applications should be addressed to Dr. Ludwig Hektoen, 637 S. Wood St., Chicago.

THE *Journal* of the American Medical Association reports that President Wilson will submit to congress a plan for a system of public health hospitals to take the place of the present condition of contract care of patients and government hospital service. The first step will be to take over the meteorological research station at the summit of the Blue Ridge, Mount Weather, Va., and convert it into a hospital for sailors and other patients from the Atlantic seaboard. Within another year locations will be selected for hospitals in southern California and the southeastern part of the United States.

UNDER date of December 8, from Rome, the trustees of the Permanent Wild Life Protective Fund are informed by Frederic C. Wolcott that "the Italian Government has at last passed a law, which goes into effect on January 1, prohibiting the shooting of all song and insectivorous birds throughout Italy." If this prohibition also includes, as it is only fair to assume that it does, the netting of all such birds, then Italy has indeed carried into effect a great reform. The importance of this action to the birds and the crops of Europe is beyond computation. Hitherto the netting of song birds while on their migrations has been a widespread industry, and the deadly roccollo has each year slaughtered hundreds of thousands of the choicest song-birds of Europe for food. Both in America and in England this abuse has been severely denounced, and an American bird protector has declared that it was "a reproach to the throne of Italy." The causes which brought about this reform in Italy, in spite of the excitement of war, are as yet unknown.

THE *American Museum Journal* states that the large collection of prehistoric pottery collected by Mr. Algot Lange on the island of Marajo has been acquired by the American Museum. Marajo Island in the mouth of the Amazon River is 165 miles long by 120 wide, and belongs to Brazil. A collection of some two thousand pieces comes from Pacoval Island in Lake Aray, the source of the Aray

River. Mr. Lange described the little island of Pacoval as an archeological mine. Fragments of pottery cover the ground and everywhere the earth is mixed with pottery ranging in size from minute pieces to vessels weighing as much as twenty-five pounds. Nothing is known of the makers of this ware. Who they were or where they came from is at present a mystery, but it is hoped that a study of the unique and beautiful decorations on the pottery will afford some information on the point.

THE Bureau of City Tests of the University of Cincinnati has submitted its annual report through Director E. K. Files. The report states that 1,024 samples have been examined, including coal, cement, gas, soot fall, oil, asphalt and soap. Less than one per cent. of the samples received have been rejected because of inferior material, so that the city in its purchases is enforcing a high standard of quality. New developments in the bureau are as follows: (1) Two cooperative chemical engineering students are employed in the laboratory to give supplementary tests and more complete analyses; (2) since last May, atmospheric pollution in Cincinnati has been studied. The deposits collected in various districts of the city are analyzed each month and the difference in composition of carbon, tar, acids, etc., between the street level and upper stories of buildings in the downtown districts is being worked out. This study will continue and is valuable for showing the effectiveness of smoke-prevention work. Other interesting investigations now being made are on the influence of the composition of coal on the fusibility of the ash and the causes of variation in the density of natural gas during the different seasons. The bureau is now doing work for the following departments of the city: Engineering, Sewerage, Purchasing, Street Lighting, Board of Education, University of Cincinnati, Park, Fire and Smoke Inspection Bureau.

THE recognition by citizens generally that the Geological Survey is a bureau of information as well as a field service has gradually placed upon it a large burden of work as well as of responsibility. The amount of correspondence involved in performing this public

duty may be indicated by the fact that approximately 50,000 letters of inquiry were handled in the different scientific branches of the survey last year. The scope of these inquiries is not less noteworthy, for they range from requests for information concerning the geology of every part of the United States or the water supply, both underground and surface, of as widely separated regions as Alaska and Florida, or for engineering data on areas in every state in the union, to inquiries regarding the natural resources of foreign countries, especially those of Central and South America. The changes in the world's trade in metals and other mineral products during the last year brought to the Geological Survey a new opportunity for special service. The inquiries concerning possible sources of this or that mineral product began early in August, and the Secretary of the Interior gave to the public an interview outlining the expected developments in the mineral industry. His statement was followed by special press bulletins issued by the survey on the more important subjects. In September, 1914, however, the demand for authoritative information had become so lively that a bulletin—"Our Mineral Reserves" was issued. In this publication the subject of the country's ability to meet the emergency demands for minerals was summarized and the survey offered to serve as an agent in bringing consumer and producer into touch with each other. This new function of acting as "central" to the mineral industry proved popular, a large volume of special correspondence developed, and a gratifying use was made of the Geological Survey's list of mineral producers and of the specific information in the possession of the federal geologists regarding practically every type of mineral deposit in the country. It is believed that this correspondence has been of material advantage to consumers and producers alike—the users of mineral products who were formerly dependent upon foreign sources of supply and the mine operators who have learned of new markets for their output.

THE Department of Agriculture is taking action, through the Biological Survey and the Forest Service, to combat a serious wave of

rabies infection of wild and domestic animals that is in danger of becoming wide-spread in the far west. The fact that the extensive dissemination of the disease is taking place through the agency of coyotes makes the situation a difficult one to meet. Outbreaks of rabies among coyotes have been noted from time to time for several years in parts of Washington, Oregon and northern Idaho, and the Forest Service undertook last year to aid in bringing the disease under control by employing hunters to make war on coyotes in the National Forests of some infected localities. Since, however, the coyotes breed in the foothills and around the outskirts of the forests, a more comprehensive campaign is called for. The eradication of coyotes in sparsely settled or rough country is said to be an exceedingly difficult task. Inasmuch as these animals are always a source of considerable losses to the livestock industry of the west, congress last year provided a special fund of \$125,000 to be spent by the Biological Survey for the eradication of predatory animals both in the national forests and on the public domain, and from this fund a special allotment has now been made to provide for fighting the rabies. The disease first appeared in parts of eastern Oregon and Washington and northern Idaho, in a region surrounded by natural barriers which tended to confine the outbreak. Domestic animals and human beings were bitten, and a good deal of alarm was manifested by residents of the infected districts, many of whom feared for the safety of their children on the roads to and from school. The disease is now reported as having extended into northern Nevada and northern California, whence it may easily be carried far. The Forest Service, the Biological Survey and the State Board of Health are working together to meet the situation in California. Modoc and Lassen counties have been put under quarantine by the state board, which has appointed forest rangers inspectors in Modoc County. Funds have been provided by the Biological Survey for the employment of additional men and the purchase of traps and poison. The public will be enlisted in the campaign, which will be led by the Biological Survey officials and the forest rangers.

UNIVERSITY AND EDUCATIONAL NEWS

WESTERN RESERVE UNIVERSITY has purchased twelve acres of land adjoining its present site and increasing it from 23 to 35 acres. The amount paid for the land is not made public, but the tax valuation is \$230,000.

FOUR business men of Portland have contributed \$25,000 toward the new buildings for the Medical Department of the University of Oregon, Portland. This makes available the \$50,000 appropriated by the state. The officers of the college now propose to raise an additional \$100,000.

OVER \$3,500 worth of chemicals, scientific glassware and other laboratory supplies ordered by the University of Washington from Germany a year ago, but held up at Rotterdam, will shortly reach this country. The British embassy has advised government officials that importation will not be prevented any longer.

A RECENT fire is said to have caused \$50,000 damage to the Havemeyer chemical laboratory of New York University.

DR. OWEN L. SHINN, professor of chemistry in the University of Pennsylvania, has been appointed director of the university summer school.

THE following new appointments have been made in the Western Reserve Medical School: Dr. J. Rogoff, formerly of the department of physiology and pharmacology, Vanderbilt Medical School, Nashville, to be instructor in experimental medicine; Dr. C. H. Fiske, formerly assistant in biological chemistry, Harvard Medical School, to be associate in biochemistry; Dr. R. W. Scott, formerly demonstrator of medicine, Western Reserve University, to be instructor in physiology.

DISCUSSION AND CORRESPONDENCE

THE DETERMINATION OF NITRATES IN SOILS

IN the June number of the *Journal of Industrial and Engineering Chemistry* appeared an interesting article by E. R. Allen, of the Ohio Agricultural Experiment Station, en-